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STATE OF ALASKA
Walter J. Hickel, Governor

ANNUAL REPORT OF PROGRESS, 1967 - 1968

FEDERAL AID IN FISH RESTORATION PROJECT F-5-R-9

SPORT FISH INVESTIGATIONS OF ALASKA

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INTRODUCTION

This report of progress consists of findings and work accomplished under the State of Alaska Federal Aid in Fish Restoration Project F-5-R-9, "Sport Fish Investigations of Alaska."

The project during this reporting period was composed of 21 separate studies. Of these, seven jobs continued the inventorying and cataloging of the numerous waters, providing a comprehensive index of the State's recreational waters. Nine jobs accomplished special studies involving Dolly Varden, grayling, silver salmon, king salmon and sheefish, among others. The remaining five jobs are designed to accomplish creel census, migration, access and silver salmon egg-take studies. The egg-take study, Job 7-F, was inactive because egg-takes were accomplished under other projects.

Special reports on specific phases of the Dolly Varden Life History Study have been published in the Department's Research Report series.

The information gathered from all of these studies provides the background necessary for better management and assists in development of future investigational studies.

The subject matter contained within these reports is often fragmentary in nature. The findings may not be conclusive and the interpretations contained therein are subject to re-evaluation as the work progresses.

RESEARCH PROJECT SEGMENT

STATE: ALASKA Name: Sport Fish Investigations of Alaska.
Project No.: F-5-R-9 Title: Saltwater Sport Fish Harvest Studies in Southeast Alaska.
Job No.: 1-D

Period Covered: April 3, 1967 to September 3, 1967.

ABSTRACT

The 1967 saltwater sport catch of salmon for the four major Southeast Alaska population centers, Juneau, Sitka, Petersburg, and Ketchikan is discussed in the following report.

Juneau, Sitka, and Ketchikan were censused as a continuation of an annual summer sampling program, while the Petersburg area catch of king salmon Oncorhynchus tshawytscha (Walbaum), was assessed for the first time.

The creel census program involved intensive angler interviews at principal boat moorages on selected sample days. Aerial surveys were flown on a specific schedule to provide a ratio of "boats fishing to boats contacted," for total catch estimations.

Data obtained are used to establish trends in recreational salmon fishing as well as provide information on actual catch by number and species for each respective population center.

A portion of the acquired data is presented separately by individual fishing area, and the remainder is presented comparatively in a separate segment at the end of the report.

RECOMMENDATIONS

1. A unified census program be continued in the major Southeast Alaska towns to maintain both comparative and individual area catch statistics, to provide current information on the trends of recreational salmon fishing, and to assist in maintaining sound management policies.
2. Areas of multiple use conflict be included in the creel census program.
3. No changes be made in the saltwater regulations at this time.

OBJECTIVES

1. To compile an annual estimate of the numbers and species, by area, of the recreational harvest of saltwater fishes.
2. To compile indexes to size and age groups with emphasis on salmonids.

TECHNIQUES USED

Anglers in the Juneau, Sitka, and Ketchikan areas were censused at selected boat harbors every weekend day and two randomly selected weekdays each weekly period.

The Petersburg census program was conducted on one randomly selected weekend day and two randomly selected week days each weekly period.

Aerial boat counts of respective census areas were flown once a week, on a creel census sample day, to provide total boat counts for correlation with boats actually censused dockside.

To preclude bias caused by angler preferences for any given day, aerial boat counts were staggered to include both week days and weekend days. The catch samples obtained from respective creel census areas were expanded to an "all-season estimated catch" for each area, using expansion factors.

During the course of interviewing dockside anglers, pertinent biological information was obtained and recorded, including catch composition, numbers of fish landed by species, preferred angling methods, preferred baits, and boating equipment used by successful anglers.

FINDINGS

Juneau Area Saltwater Creel Census, 1967

The Juneau area saltwater census program was initiated April 24, and was continued until the approximate end of angling activity, September 3, 1967.

The design of the census program was similar to that of both 1965 and 1966. Both weekend days and two week days were censused each weekly period.

Aerial boat counts were scheduled to include a Saturday count the first week, a Sunday count the second week and a week day count the third week. The cycle was repeated beginning the fourth week.

To provide adequate census coverage, three aides were utilized, interviewing incoming anglers at Juneau-Douglas, Auke Bay, and Tee Harbor moorages. Coverage was reduced to Tee Harbor and Auke Bay during the latter part of August.

The boundaries of the fishing area censused remained the same as in past years and is shown in Figure 1.

Only those anglers fishing with rod and reel were considered to be recreational sport fishermen or sport-gear commercial fishermen. The boats with commercial trolling poles or hand "gurdies" were considered to be "commercial" boats, and were not included in the census program.

The total catch of the sport-gear commercial fishermen is, however, difficult to assess as they habitually sell their fish before entering the respective boat moorages, and catch figures for this group of fishermen are minimal. Table 1 presents the catch of all sport and sport-gear commercial boats censused during the 1967 season.

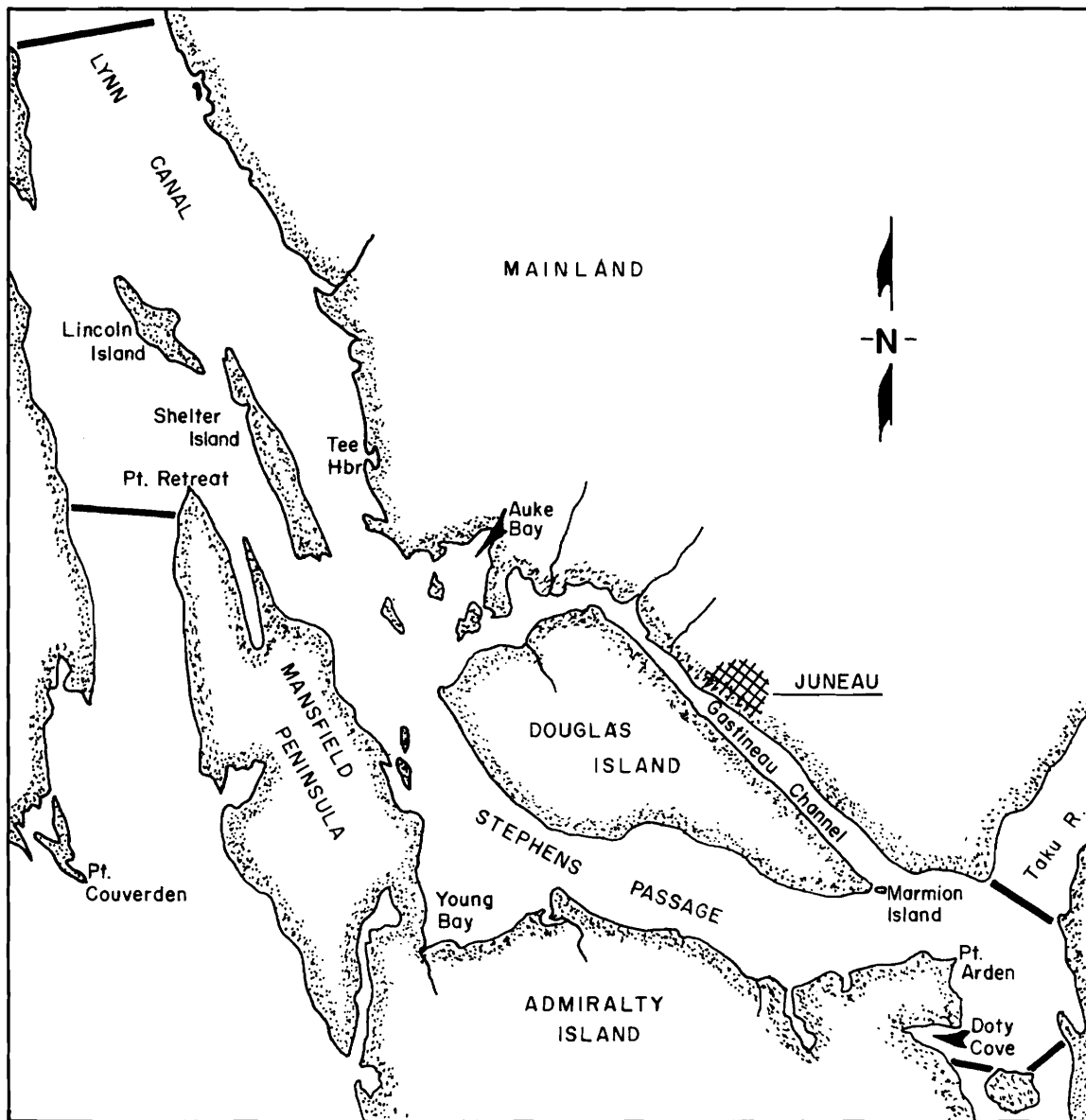


FIGURE 1. JUNEAU CREEL CENSUS BOUNDARIES, 1967.

TABLE 1 - Total and Comparative Catch by Sport and Sport-Geared Commercial Boats Censused, Juneau, 1967.

Boat Type	No. of Boats	Kings	Coho	Pink	Chum	Total Salmon	% of Total
Sport	1,683	562	400	64	16	1,042	42.0%
Commercial*	440	540	771	85	46	1,442	58.0%
	2,123	1,102	1,171	149	62	2,484	

*Sport-Geared Commercial Boats.

Table 2 presents the comparative number of sport and sport-geared commercial boats comprising the Juneau fishing fleet for years 1966 and 1967. An increase in the numbers of sport or strictly recreational fishermen is evident.

TABLE 2 - Comparative Numbers of Sport and Sport-Geared Commercial Boats Fishing Juneau Area, 1966-1967.

	1966		1967	
	No. Boats	% of Total	No. Boats	% of Total
Sport Boats	1,033	72.0	1,683	79.3
Sport-Geared Commercial Boats	401	28.0	440	20.7

Table 3 presents the salmon catch per boat trip for 1967 and is compared with years 1965 and 1966.

A significant decrease is evident in king salmon, and a rather marked decrease in the catch of coho salmon *O. kisutch* (Walbaum), from that of 1966. It is noteworthy that king salmon have shown a steady decline since 1964 while the other species have displayed a rather normal cyclic level of abundance.

TABLE 3 - Average Salmon Catch Per Boat Trip, Juneau, 1963-1967.

Species	Salmon Per Boat Trip				
	1963	1964	1965	1966	1967
King	0.95	1.19	0.83	0.74	0.51
Coho	1.70	1.60	2.41	1.42	0.55
Pink	0.05	0.12	0.04	0.11	0.07
Chum	0.02	0.01	0.03	0.002	0.02
Total	2.72	2.92	3.31	2.272	1.15

During the 1967 season the total of 4,715 anglers interviewed fished 25,665 hours to catch a total of 2,484 salmon of all species. The average catch of salmon per angler was 0.53, and the average catch per hour was 0.09.

Data presented in Table 4 shows the bi-weekly census summaries and the timing of the salmon species entering the saltwater sport fishery.

TABLE 4 - Creel Census Summaries by Bi-Weekly Periods, Juneau, 1967.

<u>Bi-Weekly Period</u>	<u>No. of Boats</u>	<u>No. of Anglers</u>	<u>Total Hrs. Fishing</u>	<u>Total Salmon</u>	<u>King</u>	<u>Coho</u>	<u>Pink</u>	<u>Chum</u>
4/24 - 5/7	36	86	481	7	7			
5/8 - 5/21	60	148	612	19	19			
5/22 - 6/4	240	545	2,643	143	142	1		
6/5 - 6/18	445	997	5,290	213	201	12		
6/19 - 7/2	282	474	3,275	221	190	23	2	6
7/3 - 7/16	377	853	5,073	532	261	207	48	16
7/17 - 7/30	268	651	3,479	308	134	141	19	14
27 7/31 - 8/13	189	466	2,606	413	59	298	46	10
8/14 - 8/27	199	433	2,029	570	77	444	33	16
8/28 - 9/3*	<u>27</u>	<u>62</u>	<u>177</u>	<u>58</u>	<u>12</u>	<u>45</u>	<u>1</u>	<u>1</u>
Total**	2,123	4,715	25,665	2,484	1,102	1,171	149	62

*One Week Period.

**Excludes Salmon Derby Days.

The catch of halibut, Hippoglossus stenolepis (Schmidt) and Dolly Varden Salvelinus malma (Walbaum) comprised the majority of the non-salmon catch. Various other species of bottom fish were taken in small numbers incidentally while fishing for the more desirable species.

Data depicted in Table 5 is the 1967 censused catch of miscellaneous fish species for the Juneau area.

TABLE 5 - Catch of Miscellaneous Fish Species Censused, Juneau, 1967.

<u>Rockfish</u>	<u>L. Cod</u>	<u>Sea Bass</u>	<u>R. Snapper</u>	<u>Dolly Varden</u>	<u>Halibut</u>
1	2	2	5	125	746

Additional biological information, including average weights and lengths of the salmon species, gear and bait preferences, and boating equipment utilized by successful anglers will be discussed in a following text segment.

Estimated All-Season Salmon Catch - Juneau, 1967

The method used to expand the season censused catch to an "all-season estimated catch" was similar to that use for the 1966 season.

A total of 133 days was sampled during the census period; all weekend days and four week days each bi-weekly period.

The expansion of the censused catch was done bi-weekly to take into consideration the availability of the individual salmon species and subsequent degree of angler effort at different seasonal periods.

Aerial boat counts were flown weekly on scheduled creel census days to provide a correlation between boats on the fishing grounds and those contacted dockside at the completion of the fishing day. The aerial boat counts indicated that 50% of all boats fishing on a given day were ultimately censused at the boat moorages.

The weekday and weekend day catch of each bi-weekly period was expanded separately, and then totaled for a total "bi-weekly catch." By expanding the days separately, bias caused by angler preference for weekend angling was precluded, and the greater weekend effort was not applied to the lesser-fished week days.

Table 6 presents the method used to expand the week day and weekend catch to arrive at a total "bi-weekly estimated catch."

TABLE 6 - Method of Expanding the Bi-Weekly and Total Censused Catch, Juneau, 1967.

Bi-Weekly Period)	Weekend days (4)-4 censused for 100% or a factor of 1.0
	Week days (10)-4 censused for 40% or a factor of 2.5
Aerial boat counts show coverage of 50.0% or a factor of 2.0	

TABLE 6 (Cont) - Method of Expanding the Bi-Weekly and Total Censused Catch, Juneau, 1967.

Censused weekend catch x 1.0 x 2.0 = est. total catch
 Censused week day catch x 2.5 x 2.0 = est. total catch

Total Expanded Bi-Weekly Catch

The total "all-season catch" is the sum of each of the adjusted bi-weekly catches discussed above.

Presented in Table 7 is the censused and "all-season estimated catch" for the Juneau area during the 1967 season.

TABLE 7 - Censused and Expanded All-Season Salmon Harvest, Juneau, 1967.

	<u>Boats</u>	<u>Anglers</u>	<u>Hours</u>	<u>King</u>	<u>Coho</u>	<u>Pink</u>	<u>Chum</u>	<u>Total Salmon</u>
All-Season Censused	2,123	4,715	25,665	1,102	1,171	149	62	2,484
All-Season Est. Catch	5,817	13,008	54,940	2,944	3,236	343	159	6,682

Note: Excludes Salmon Derby Figures.

Shown in Table 8 is the estimated catch of salmon by sport and sport-geared commercial fishermen for 1965-1967.

TABLE 8 - Total Estimated All-Season Salmon Harvest for Juneau Area, 1965-1967.

<u>Year</u>	<u>King Salmon</u>	<u>Coho Salmon</u>	<u>Pink Salmon</u>	<u>Chum Salmon</u>	<u>Total* Salmon</u>
1965	5,092	14,779	242	154	20,267
1966	4,825	7,911	594	14	13,344
1967	2,944	3,236	343	159	6,682

*Excludes salmon derby data; but includes catch by sport-geared commercial fishermen censused.

Juneau Salmon Derby, 1967

The annual Juneau area "Golden North Salmon Derby," sponsored by the "Territorial Sportsmen of Juneau," was held July 28, 29, and 30.

Derby fishing areas, rules, and regulations were similar to previous years and as discussed in the 1964 (Vol. 6, Dingell-Johnson Project Report).

As explained in a previous report, (Heckart, 1966), the size of the derby and subsequent difficulty of obtaining accurate information, precluded the opportunity to count and weigh all fish entered. Therefore,

Table 9 depicts the 1967 Juneau derby catch in pounds, as officially entered, and is compared with the 1966 derby catch.

TABLE 9 - Juneau Salmon Derby Landings, 1966 - 1967.

<u>Year</u>	<u>Lbs. of King</u>	<u>Lbs. of Coho</u>	<u>Lbs. of Pink</u>	<u>Lbs. of Chum</u>	<u>Total Pounds Salmon</u>
1966	12,080	6,953	406	261	19,700
1967	6,506	5,700	636	243	13,085

Sitka Area Saltwater Creel Census, 1967

The Sitka Sound saltwater creel census program began June 5 and continued until August 27, 1967 for a total of 85 days.

A small amount of king salmon sport fishing was conducted prior to the beginning of the creel census but was relatively insignificant in view of the late arrival of salmon in the Sitka Sound area.

Sport fishing for coho salmon remained good for a period of two to three weeks following the termination of the census program with moderate participation by local anglers. The catch during this period was not assessed and subsequently not included in the seasonal catch.

The program was conducted in an identical manner as the previously discussed Juneau census program, i.e., both weekend days and two randomly selected week days were censused each week. Aerial boat counts were flown weekly on census days for "boats fishing-to-boats censused" correlations.

Boundaries of the area censused remained the same as they have each year since the inception of the program in 1964. Figure 2 depicts the Sitka Sound creel census area.

The total and comparative catch of sport and sport-gear commercial boats during the 1967 season are presented in Table 10. As indicated earlier in the Juneau segment, the catch depicted for "sport-gear commercial fishermen" is to be considered minimal.

TABLE 10 - Total and Comparative Catch by Sport and Sport-Gear Commercial Boat Censused, Sitka, 1967.

<u>Boat Type</u>	<u>No. of Boats</u>	<u>Kings</u>	<u>Coho</u>	<u>Pink</u>	<u>Chum</u>	<u>Total Salmon</u>	<u>% of Total</u>
Sport	217	54	59	16	2	131	59.3
Commercial*	65	7	80	3	0	90	40.7
	292	61	139	19	2	221	

*Sport-Gear Commercial Boats.

The comparative number of sport and sport-gear commercial boats participating in the fishery is shown in Table 11 and is compared with 1966.

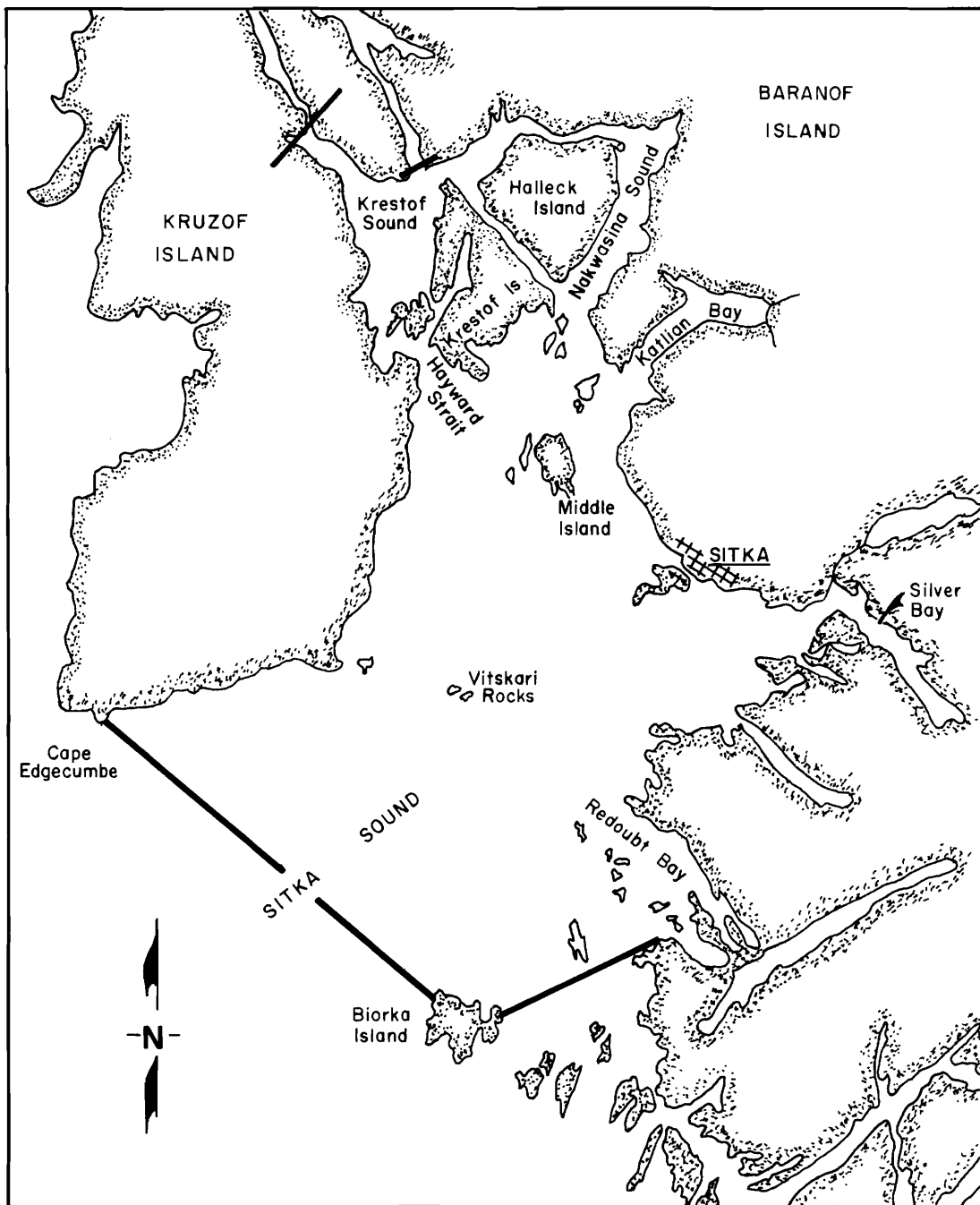


FIGURE 2. SITKA SOUND CREEL CENSUS BOUNDARIES, 1967.

TABLE 11 - Comparative Numbers of Sport and Sport-Geared Commercial Boats Fishing Sitka Sound, 1966-1967.

	1966		1967	
	<u>No.</u> <u>Boats</u>	<u>% of</u> <u>Total</u>	<u>No.</u> <u>Boats</u>	<u>% of</u> <u>Total</u>
Sport Boats	240	81.4	217	77.0
Sport Geared Commercial Boat	55	18.6	65	23.0

The catch of salmon, by species, per boat trip is presented in Table 12. The current season showed a slight decline in catch per unit of effort for king salmon and a corresponding increase in the coho catch.

The figures indicate that 1967 was one of the best seasons for coho in several years, while the catch of king salmon shows a slight but steady decline.

It is to be noted that the sport catch itself does not entirely indicate salmon abundance or general population stability, as sport fishermen are influenced greatly by weather conditions and other incentives such as local fishing derbies.

TABLE 12 - Average Salmon Catch Per Boat Trip, Sitka, 1964-1967.

<u>Species</u>	<u>Salmon Per Boat Trip</u>			
	<u>1964</u>	<u>1965</u>	<u>1966</u>	<u>1967</u>
King	0.19	0.41	0.33	0.22
Coho	0.53	0.32	0.40	0.49
Pink	--	<u>0.31</u>	<u>0.01</u>	<u>0.07</u>
Total	0.72	1.04	0.74	0.78

The 613 anglers interviewed fished 2,858 hours for a total of 221 salmon of all species. The average angler fished 4.6 hours per trip for an average catch of 0.36 salmon.

It is interesting to note that during the 1966 season 617 anglers were contacted with a catch of 223 salmon, for an identical catch per angler figure of 0.36 salmon.

Table 13 presents the 1967 bi-weekly creel census summaries for Sitka Sound. The catch of miscellaneous bottom fish, etc. is presented in Table 14.

Halibut continues to be the most popular non-salmon species landed and is fished for by choice by a substantial number of fishermen.

TABLE 13 - Creel Census Summaries by Bi-Weekly Periods, Sitka, 1967.

<u>Bi-Weekly Period</u>	<u>No. of Boats</u>	<u>No. of Anglers</u>	<u>Hours Fished</u>	<u>Total Salmon</u>	<u>Kings</u>	<u>Coho</u>	<u>Pink</u>	<u>Chum</u>
6/5 - 6/18	38	95	249	8	8			
6/19 - 7/2	47	102	524	10	8	2		
7/3 - 7/16	73	153	739	23	13	9	1	
7/17 - 7/30	69	141	755	90	11	65	13	1
7/31 - 8/13	49	108	550	71	19	47	4	1
8/14 - 8/27	<u>6</u>	<u>14</u>	<u>41</u>	<u>19</u>	<u>2</u>	<u>16</u>	<u>1</u>	<u> </u>
Total*	282	613	2,858	221	61	139	19	2

*Excludes Salmon Derby Days.

TABLE 14 - Catch of Miscellaneous Fish Species Censused, Sitka Sound, 1967.

<u>Ling Cod</u>	<u>Rockfish</u>	<u>Sea Bass</u>	<u>Red Snapper</u>	<u>Halibut</u>
50	35	1	21	536

Estimated All-Season Salmon Catch, Sitka Sound, 1967

The same method of expanding the censused catch to an estimated "all-season" harvest was used as for the Juneau area, discussed earlier.

Weekend and week day catches were expanded separately, and totaled for an estimated bi-weekly catch. The estimated seasonal catch is the sum of the expanded bi-weekly catches.

Aerial boat counts which were flown weekly on census days indicated that 44.6 percent of boats fishing were contacted upon their return to the boat moorages.

Twenty-two week days and 17 weekend days were censused during the 85 day season, for a 28.3 percent and 88.0 percent respective census coverage.

The censused and estimated "all-season" salmon harvest for the Sitka Sound area is presented in Table 15.

TABLE 15 - Censused and Expanded All-Season Salmon Harvest, Sitka, 1967.

	<u>Boats</u>	<u>Anglers</u>	<u>Hours</u>	<u>King</u>	<u>Coho</u>	<u>Pink</u>	<u>Chum</u>	<u>Total Salmon</u>
Censused	282	613	2,858	61	139	19	2	221
All-Season Est. Catch	834	1,821	8,296	166	461	46	4	677

The estimated salmon catches for years 1965 through 1967 are presented comparatively in Table 16. Although the census programs have necessarily been altered somewhat from year to year, the method of expanding the censused catches has been identical to compensate for varied census effort.

TABLE 16 - Total Estimated Salmon Harvest for Years 1965-1967, Sitka Sound.

<u>Year</u>	<u>King Salmon</u>	<u>Coho Salmon</u>	<u>Pink Salmon</u>	<u>Chum Salmon</u>	<u>Total* Salmon</u>
1965	383	217	206	--	806
1966	582	437	60	3	1,082
1967	380	478	48	4	910

*Figures include both the recorded salmon derby catch and that of sport-geared commercial fishermen censused.

Sitka Salmon Derby, 1967

The annual Sitka salmon derby was held the last two weekends in June, the 17th, 18th, and 24th, 25th.

The derby catch was obtained at the official derby barge as fish were entered. Unlike the Juneau area, only one entry barge is used at Sitka, permitting total counts by individual species.

Derby boundaries remained the same in 1967 as in the past several years and are essentially the same as shown in Figure 3.

With added incentive due to the addition of new prizes, it is felt that at least 90 percent of the salmon taken during the derby were entered at the official barge in 1967.

Table 17 presents the 1967 derby catch and is compared to the 1965 and 1966 harvests. The figures indicate little deviation in total catch for these three years.

Table 17 - Sitka Salmon Derby Landings, 1965 - 1967.

<u>Year</u>	<u>Total Salmon</u>	<u>King</u>	<u>Coho</u>	<u>Pink</u>	<u>Chum</u>	<u>H</u>	<u>LC</u>	<u>RS</u>	<u>DV</u>
1965	194	155	38	1	--	60	11	--	2
1966	242	188	50	3	1	78	22	--	4
1967	233	214	17	2	--	94	74	6	--

H- Halibut; LC - Ling Cod; RS - Red Snapper; DV - Dolly Varden

Ketchikan Area Saltwater Creel Census, 1967

Creel census of the Ketchikan sport fishery began May 15, continued until August 20, for a total of 98 days. The creel census program and schedule of aerial boat counts were conducted in an identical manner as those in the Juneau and Sitka areas, which are discussed in the previous report segments.

The boundaries of the area included in the census program remained essentially the same as they have in past years. The region censused and major fishing areas are shown in Figure 3.

The percentage of sport-gearred commercial fishermen in the Ketchikan small boat fleet rose substantially during 1967. No precise reason can be given for the increase from the 11.1 percent censused in 1966 to the 17.9 percent of 1967.

The Ketchikan sport-gearred commercial catch is typically difficult to assess as many fish are sold prior to the angler's return to the boat moorages. For this reason, the sport-gearred commercial catch shown in Table 18 is a minimal figure.

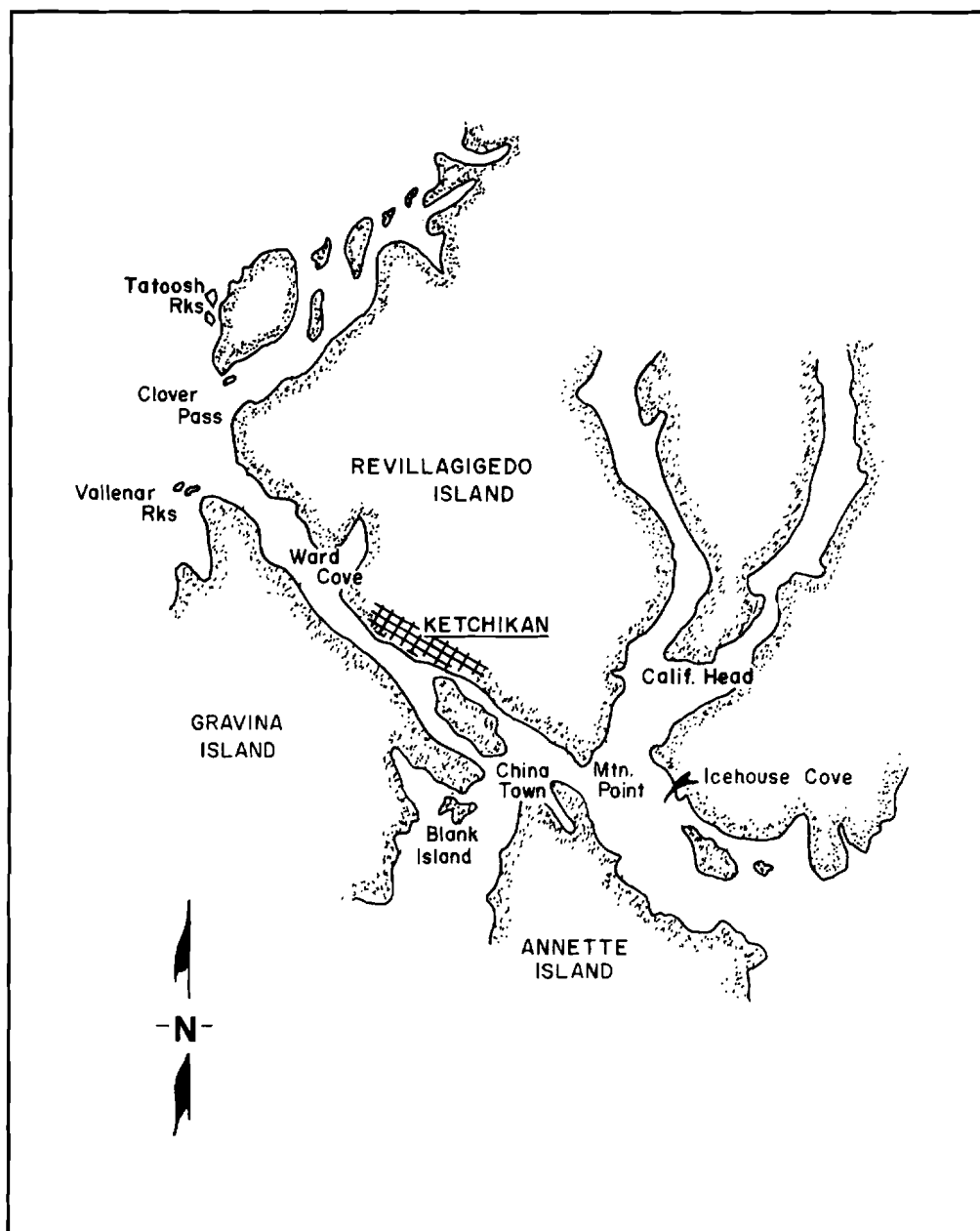


FIGURE 3. KETCHIKAN SALTWATER FISHING AREAS, 1967.

TABLE 18 - Total and Comparative Catch of Sport and Sport-Geared Commercial Boats Censused, Ketchikan, 1967.

Boat Type	No. of Boats	Kings	Coho	Pink	Chum	Total Salmon	% of Total
Sport	351	110	4	5	0	119	65.4
Commercial*	77	57	5	0	1	63	34.6
	428	167	9	5	1	182	

*Sport-geared commercial boats.

Presented in Table 19 is the comparative numbers of sport and sport-geared commercial boats comprising the Ketchikan fleet. It is to be noted that the percentage of small boats fishing commercially in the Ketchikan area increased during 1967.

TABLE 19 - Comparative Numbers of Sport and Sport-Geared Commercial Boats Fishing, Ketchikan Area, 1966-1967.

	1966		1967	
	No. Boats	% of Total	No. Boats	% of Total
Sport Boats	275	89.0	351	82.0
Sport-geared commercial boats	34	11.0	77	18.0

The 1967 salmon catch per boat trip is presented in Table 20 and is compared with years 1965 and 1966.

King salmon showed a slight downward trend in 1967, as did the other Southeast Alaska areas. Coho catch per boat dropped significantly, as was reflected in all areas except Sitka which experienced good coho sport fishing during 1967.

The catch of pink salmon O. gorbusha (Walbaum), also dropped markedly from the exceptional catch of 1966.

TABLE 20 - Average Salmon Catch Per Boat Trip, Ketchikan, 1965-1967.

Species	Salmon Per Boat Trip		
	1965	1966	1967
King	0.36	0.55	0.39
Coho	0.22	0.19	0.02
Chum	0.008	0.009	0.01
Pink	0.14	0.43	0.002
Total	0.728	1.179	0.422

Data depicted in Table 21 are the bi-weekly creel census summaries for the Ketchikan salmon fishery. The 762 anglers interviewed fished 5,833 hours for a total of 182 salmon. The average angler fished approximately 7.7 hours for a catch of 0.24 salmon. The harvest of 0.24 salmon per angler is a decrease from the 1966 average angler catch per boat trip of 1.1 salmon.

TABLE 21 - Creel Census Summaries by Bi-Weekly Periods, Ketchikan, 1967.

<u>Bi-Weekly Period</u>	<u>No. of Boats</u>	<u>No. of Anglers</u>	<u>Angler Hours</u>	<u>Total Salmon</u>	<u>Kings</u>	<u>Coho</u>	<u>Pink</u>	<u>Chum</u>
5/15 - 5/28	146	334	2,748	91	91			
5/29 - 6/11	189	207	1,583	57	55		1	1
6/12 - 6/25	28	68	500	6	6			
6/26 - 7/9	16	32	215	15	13	1	1	
7/10 - 7/23	13	30	215	3	2		1	
7/24 - 8/6	18	41	291	2		2		
8/7 - 8/20	<u>18</u>	<u>50</u>	<u>281</u>	<u>8</u>	<u> </u>	<u>6</u>	<u>2</u>	<u> </u>
Total*	428	762	5,833	182	167	9	5	1

*Includes Sweepstakes Derby Catch.

The catch of miscellaneous non-salmon species is shown in Table 22. The predominant fish taken were the various rockfishes, Sebastes sp., which is typical of the Ketchikan area.

Whereas halibut comprise the major non-salmon species in all other Southeast census areas, Ketchikan takes proportionately fewer numbers of this species.

TABLE 22 - Catch of Miscellaneous Fish Species Censused, Ketchikan, 1967.

<u>Rockfish</u>	<u>Ling Cod</u>	<u>Red Snapper</u>	<u>Halibut</u>	<u>Flounder</u>
103	5	61	26	2

Estimated All-Season Salmon Catch, Ketchikan, 1967

The censused saltwater catch was expanded to an "all-season estimated catch" using the same method as in the Juneau and Sitka programs.

Week day and weekend catches were expanded separately, totaled for a bi-weekly harvest, then totaled for an all-season catch. Aerial boat counts indicated 18.2 percent of the boats observed fishing were actually censused upon their return to the Ketchikan small-boat harbors.

Table 23 presents the 1967 censused and estimated total harvest by both sport and sport-commercial fishermen. It is to be recognized that these catch figures are minimal, particularly in view of the sport fisheries adjacent to the immediate Ketchikan area. The Bell Island salmon catch, for example, was not censused but could be roughly included in the Ketchikan area catch as a substantial number of local fishermen participate.

TABLE 23 - Censused and Expanded All-Season Salmon Harvest, Ketchikan, 1967.

	<u>Boats</u>	<u>Anglers</u>	<u>Hours</u>	<u>King</u>	<u>Coho</u>	<u>Pink</u>	<u>Chum</u>	<u>Total Salmon</u>
All-Season Censused	428	762	5,833	167	9	5	1	182
All-Season Est. Catch	1,769	3,587	25,900	594	86	22	2	704

Total salmon catches for years 1965 through 1967 are presented comparatively in Table 24. It is evident that the catch of king salmon was down approximately 50 percent from that of 1965 and 1966 while the harvest of coho declined even further. It appears that the overall catch showed an approximate 50 percent decrease from that of a normal year, taking into consideration the above normal catch of pink salmon in 1966.

TABLE 24 - Total Estimated Salmon Harvest for Years 1965-1967, Ketchikan.

<u>Year</u>	<u>King Salmon</u>	<u>Coho Salmon</u>	<u>Pink Salmon</u>	<u>Chum Salmon</u>	<u>Total* Salmon</u>
1965	1,161	236	154	11	1,562
1966	1,179	457	1,142	13	2,791
1967	594	86	22	2	704

*Includes both the salmon derby catch, and that of the sport-gearred commercial fishermen censused.

Ketchikan Salmon Derby, 1967

Ketchikan held its annual "Sweepstakes" salmon derby, but as discussed in a previous report (Baade, 1966), the derby catch was not separated from the seasonal catch, and is included in the all-season catch data.

Greater creel census effort was, however, directed toward the derby weekends to obtain a larger sample of catch data to correspond with the increased angler effort and activity.

Petersburg Area Saltwater Creel Census, 1967

A new saltwater creel census program was initiated in the Petersburg district during the spring of 1967, marking the first assessment of the sport fish harvest of king salmon in that area.

Major emphasis was placed on the early king salmon fishing as this species supports the majority of the saltwater fishing effort. Angling for coho which enter the area in late summer is conducted primarily in the freshwater streams adjacent to the Petersburg road system and Wrangell Narrows.

The only major difference in the census program, from the other Southeast areas previously discussed, was the enumeration of boats on the fishing grounds.

The king salmon fishing areas were confined primarily to Wrangell Narrows and Point Frederick, and boat counts were made by skiff prior to censusing at the boat harbors.

A number of anglers fish commercially with skiffs and sport gear in Petersburg as they do in the other areas. Enumeration of the sport and sport-gear commercial fishermen indicated approximately 18 percent were selling their catch commercially. This is a fairly consistent figure when compared with the other Southeast Alaska fisheries.

Table 25 shows the comparative catch of king salmon by sport and sport-gear commercial fishermen for the Petersburg area.

TABLE 25 - Total and Comparative Catch of Sport and Sport-Gear Commercial Fishermen, Petersburg, 1967.

<u>Boat Type</u>	<u>No. of Boats</u>	<u>King Salmon</u>	<u>% of Kings</u>
Sport	82	32	69.5
Commercial*	<u>18</u>	<u>14</u>	<u>30.5</u>
	100	46	

*Sport-gear commercial

The area censused during the Petersburg king salmon fishery is presented in Figure 4.

During the 77 day census period, 646 fishermen took a total of 190 king salmon and 109 halibut. The average angler fished 4.0 hours for a mean catch of 0.29 salmon.

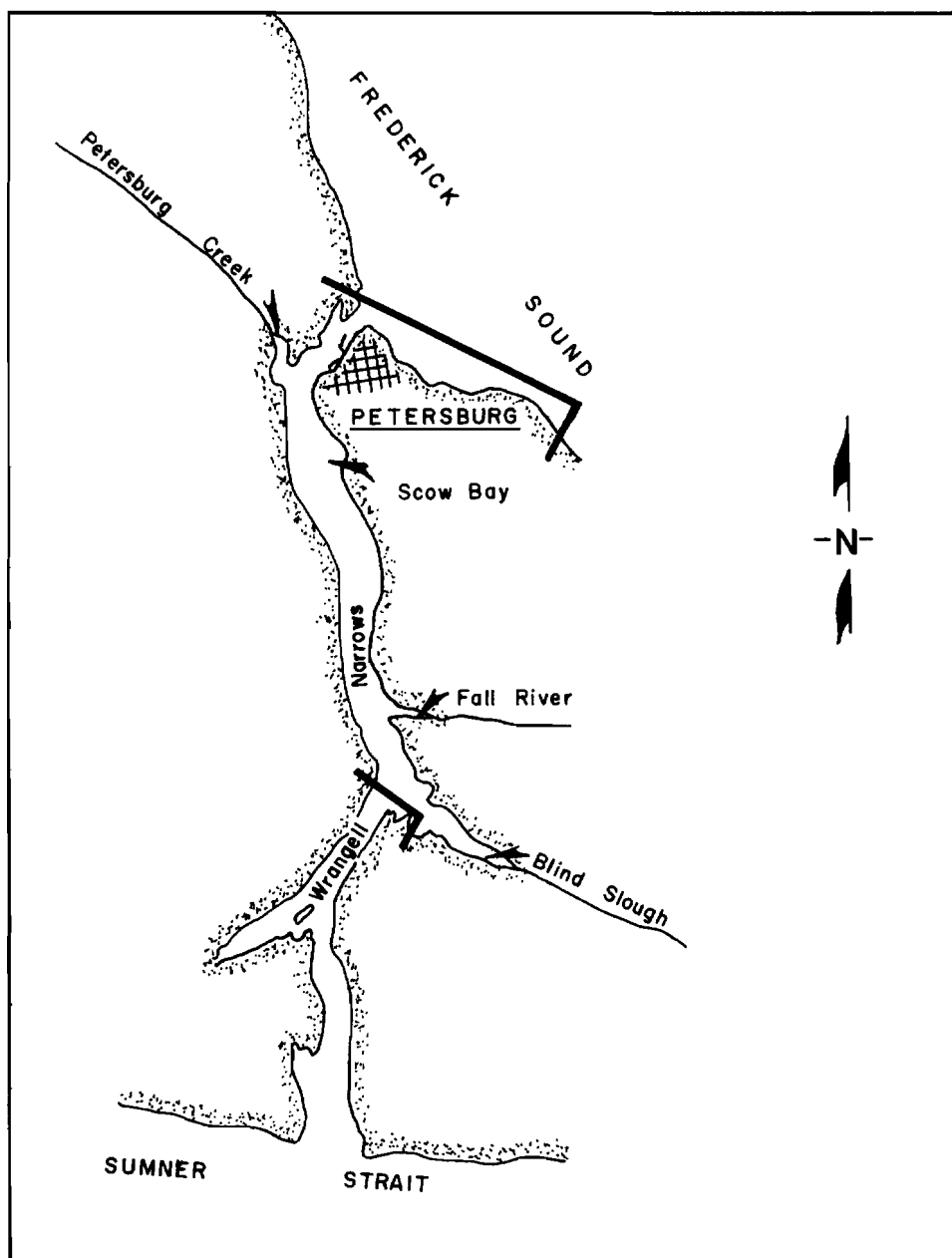


FIGURE 4. PETERSBURG CREEL CENSUS BOUNDARIES, 1967.

Halibut was the only non-salmon species recorded and good angler success was evident by the substantial numbers boated.

Presented in Table 26 are the 1967 bi-weekly census summaries for the Petersburg saltwater salmon fishery.

TABLE 26 - Creel Census Summaries by Bi-Weekly Periods, Petersburg, 1967.

<u>Bi-Weekly Period</u>	<u>No. of Boats</u>	<u>No. of Anglers</u>	<u>Hours Fished</u>	<u>Total Kings</u>	<u>Total Halibut</u>
4/3 - 4/16	6	9	25	1	--
4/17 - 4/30	20	31	130.5	9	4
5/1 - 5/14	26	39	192.5	12	5
5/15 - 5/28	21	35	139.5	12	4
5/29 - 6/11	22	35	150	11	9
6/12 - 6/18	<u>5</u>	<u>8</u>	<u>33</u>	<u>1</u>	<u>3</u>
Total	100	157	670.5	46	25

The Petersburg censused catch was expanded in the same manner as Juneau, Sitka and Ketchikan, with two exceptions. The first, correlation between boats fishing and boats censused was computed on a bi-weekly basis rather than as a seasonal average as in the other areas. The second, actual censusing of anglers was conducted only on one weekend day, rather than both as in the other fisheries.

Table 27 depicts the estimated seasonal harvest by bi-weekly period in the Petersburg area.

TABLE 27 - Estimated All-Season Salmon Harvest by Bi-Weekly Period, Petersburg, 1967.

<u>Bi-weekly Period</u>	<u>No. of Boats</u>	<u>No. of Anglers</u>	<u>Hours Fished</u>	<u>Total Kings</u>	<u>Total Halibut</u>
4/3 - 4/16	18	27	75	3	--
4/17 - 4/30	89	134	549	39	17
5/1 - 5/14	85	126	610	40	15
5/15 - 5/28	85	139	506	44	18
5/29 - 6/11	120	188	766	60	47
6/12 - 6/18	<u>20</u>	<u>32</u>	<u>132</u>	<u>4</u>	<u>12</u>
Total	417	646	2,638	190	109

Additional data pertaining to salmon lengths and weights, gear and bait preferences, and boating equipment used are presented in the following report section.

General Comparisons, Southeast Alaska Creel Census Areas, 1967

The information included in the following tables is presented comparatively for each of the saltwater fishing areas.

Figures in Tables 28 and 29 were in some cases derived from total data acquired for a respective month, and by a monthly sample in others which were of considerable size. Those that represent an average sample by month were in no case less than 50 percent of the total.

Table 28 represents the average round weights of king and coho salmon landed in the four major saltwater fishing areas.

TABLE 28 - Average Round Weights of King and Coho Salmon Censused in Pounds, by Month, Southeast Alaska, 1967.

<u>Area</u>	<u>Species</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>August</u>
Juneau	King	-	19.2#	21.0#	13.6#	7.8#
	Coho	-	-	7.0#	8.5#	11.9#
Sitka	King	-	-	19.1#	17.3#	20.3#
	Coho	-	-	6.5#	8.0#	11.5#
Ketchikan	King	-	22.7#	18.1#	20.2#	-
	Coho	-	-	-	6.0#	8.3#
Petersburg	King	16.9#	21.5#	16.5#	-	-

Table 29 depicts the average length in centimeters of salmon taken in the four major Southeast Alaska saltwater fisheries.

TABLE 29 - Average Length in Centimeters of Salmon Taken in Respective Southeast Alaska Census Areas, 1967.

<u>Area</u>	<u>Species</u>	<u>April*</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>August</u>
Juneau	King	-	85.0	73.4	70.3	65.8
	Coho	-	-	67.9	67.4	71.3
Sitka	King	-	-	90.1	72.3	78.4
	Coho	-	-	-	63.5	71.6
Ketchikan	King	-	89.4	83.3	81.7	-
	Coho	-	(Sample too small)			69.3
Petersburg	King	80.0	83.0	79.2	-	-

*Petersburg only area censused during April.

Bait and gear preferences, boat equipment, etc., differ somewhat in each of the censused salmon fisheries. Table 30 represents the respective choice by successful saltwater anglers. The figures shown actually depict the percentage of fish taken by respective methods for each area.

TABLE 30 - Fishing Success by Angling Method, Bait Type, and Boat Preferences, All Southeast Alaska Areas, 1967.

		Juneau %	Sitka %	Petersburg %	Ketchikan %
Angling Method	Troll	70	98	100	99
	Mooch	51	--	--	1
	Strip	7	2	--	--
	Other	14	--	--	--
Bait Type	Plug Cut	18	25	25	5
	Whole Herring	42	34	75	93
	Strip Cut	37	18	--	1
	Plugs, Spoons, Etc.	3	23	--	1
Herring	Fresh	36	14	--	1
	Frozen	64	86	--	99
Boat Size	Open < 20'	18	22	68	55
	Cabin 16-20'	59	59	25	40
	Cabin > 20'	23	19	7	5
Power	Outboard	70	70	90	92
	Inboard	30	30	10	8

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